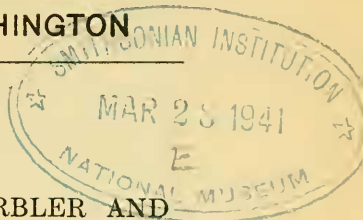


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTONNEW RACES OF FLYCATCHER, WARBLER AND
WRENS FROM MEXICO.BY ROBERT T. MOORE.¹

The following new forms have appeared in recent accessions to our collections from Mexico, and are herewith described.

Megarhynchus pitangua tardiusculus,² subsp. nov.

Type.—Male adult, No. 12726, collection of Robert T. Moore; Rancho Santa Barbara, 20 miles northeast of Rosario, Sinaloa, Mexico; altitude 2500 feet; December 23, 1934; collected by Chester C. Lamb.

Subspecific characters.—Nearest to *Megarhynchus pitangua caniceps* of southern Jalisco, but differs in winter plumage by having back, rump and sides of neck posterior to black auricular area much richer green (Yellowish Olive³ instead of Grayish Olive); pileum darker gray; outer margin of rectrices buffy green, less cinnamon; bill longer and much wider. Compared with the type of *Scaphorhynchus mexicanus* Lafresnaye, now in the Museum of Comparative Zoology, Cambridge, and a series from eastern Mexico, Oaxaca and Guerrero, the upper parts are much purer green, less bronzy; pileum grayer instead of nearly pure black; wing and tail shorter; culmen much longer and wider. In nuptial plumage the differences with *mexicanus* are relatively the same, but no comparison can be made with nuptial plumage representatives of *caniceps*, as they are apparently non-existent in museum collections.

Range.—The lower mountains of southeastern Sinaloa, west of the main Sierra Madre (Carrizo, Rancho Picacho, Rancho Santa Barbara, Juan Lisiarraga Mt. and "Presidio"), south to Sauta in western Nayarit at lower altitude.

Remarks.—When Ridgway described *M. p. caniceps* he had only two specimens, the male Type in collection of the United States National Museum, from Barranca Veltran, southern Jalisco, and one female. Since that time no other specimens have been taken, not even from the Central

¹ Contribution from the California Institute of Technology.

² *Tardiusculus* refers to characteristic slow movements of this bird.

³ Names of colors in this paper, when capitalized, are taken from Ridgway's "Color Standards and Color Nomenclature," 1912.

MAR 27 1941

Plateau country of Mexico, neither by Batty, Bailey, Chester Lamb nor myself. Indeed, Jouy (Proc. U. S. N. Mus., XVI, 1894, p. 783) remarks that, although he found it "common in the tree tops at the bottom of the barranca (Veltran)," it was "not taken elsewhere." He describes this barranca, which is mentioned as "neighboring" San Marcos on the "east base of the Volcano Colima" as one of "tropical luxuriance" as compared with the "barren plateau." *Caniceps* may be confined to the barrancas of the Vol. Colima and nearby areas and absent from the more arid plateau region. At any rate, the meteorological conditions are quite different from those of the mountains of Sinaloa, west of the Plateau, where we have obtained *tardiusculus* only in a narrow altitudinal strata between 2500 and 3200 feet.

Two specimens of *tardiusculus*, taken previous to ours, have been recorded from Sinaloa, a male from Presidio by Salvin and Godman (Bio. Cen. Amer., Pt. 2, p. 52) and one individual from Juan Lisiarraga Mt. by Miller (Bull. Amer. Mus. N. H., XXI, Art XXII, p. 339). This last bird, as well as another from the same locality, are now in the American Museum of Natural History, both too worn to be comparable with our fresh individuals. The Moore Collection fortunately has an adequate series of recently-collected specimens, nine from Sinaloa, two from Sauta, Nayarit, an unworn March 20th bird from Veracruz, 1 male from Oaxaca and six individuals from Costa Rica and Honduras. Comparison of these birds with specimens in the same winter plumage in the Museum of Comparative Zoology, Cambridge, taken from twenty to forty years ago, reveal there is little or no postmortem change in this species.

It is unfortunate no representative of *caniceps* in nuptial plumage exists. The Type was secured on March 25th in slightly worn winter plumage, with which our April 18th female from Carrizo is comparable. Two specimens taken in May at Isgugilite, Guerrero, are intermediate between *mexicanus* and *caniceps*, having the gray head of the latter.

All of our birds have been obtained in the upper portion of the Arid Tropical Zone in the lower mountains of southeastern Sinaloa, except for two at low altitude at Sauta, western Nayarit, about one hundred miles to the south. But we have not found it on the coastal plains of Sinaloa, where Forrer is reported by Salvin and Godman (loc. cit.) to have secured an individual near sea level at Presidio about thirty-two miles in a direct line due west of our collecting station at Santa Barbara. This may have been taken in the near-by mountains to the east of Presidio. The "Juan Lisiarraga Mt.," reported as "5500 ft." in altitude (loc. cit.) seems from our investigation to be a locality south of our Santa Barbara collecting station near Lat. 23° north. Miller especially noted the large size of the bill and the authors of the *Biologia* the gray crown of the Sinaloa birds. The Sauta birds are nearly true *tardiusculus*.

Specimens examined.—*Tardiusculus*—Sinaloa: Carrizo 1 ♀ (April 18, eggs in oviduct), Rancho Picacho 4 ♂ 1 ♀ (Aug. 4–18), Rancho Santa Barbara 2 ♂ 1 ♀ (incl. Type, Dec. 12–23), Juan Lisiarraga Mt. 2 ? (Apr. 27); Nayarit: Sauta 1 ♂ 1 ♀ (May 2, 3, breeding). *Caniceps*—Jalisco: Barranca Veltran 1 ♂ (Type, Mar. 25), 1 ♀. *Mexicanus*—"Mexico"

1 ? (Type); Veracruz: near Jalapa 1 ♀ (Mar. 20), Orizaba 1 ♂ 1 ♀, Pasa Neuva 1 ♀ (Apr. 22), Antigua 1 ♂ (Mar. 15), Papantla 1 ♂ (Mar. 16), Motzorongo 1 ♂ (Feb. 28); Puebla: Metlatoyuca 1 ♂ (Feb. 16); Yucutan: Chichen Itza 1 ♂ 1 ♀ (Feb. 6), LaVega 1 ♂ 1 ♀ (Mar. 16); Tabasco: Frontera 1 ♂ (March 8); Oaxaca: Santa Domingo 2 ♂ (June 15–16), Escuilapa 1 ♂ (Feb. 25), Chivela 4 ♂ 2 ♀ (March 6–May 9); Tapanatapec 2 ♂ 2 ♀ (July 25–Sept. 1), Tehuantepec 3 ♀ (Nov. 20–Dec. 2–Feb. 16); Chiapas: Huehuetan 2 ♂ 1 ♀ (Feb. 23–Mar. 2), Ocilapa 1 ? (Aug. 27); also three large series in the American Museum of Natural History, U. S. National Museum, and Museum of Comparative Zoology from Yucutan, Guatemala, Honduras, Costa Rica, and Panama (including two specimens of *M. p. deserticola* Griscom from Guatemala). The Moore collection also has specimens from:—Costa Rica: Villa Quesada 1 ♀ (Dec. 24), San Carlos 1 ♂ (March 14), Zarcero 1 ♂ (Sept. 18); from Honduras: Plan del Rancho 1 ♂ 1 ♀ (June 30, July 2), San Marcos de Guaymas 1 ♂ (June 29).

Measurements.—The measurements of specimens of the new form average very slightly smaller in wing and tail than those of *mexicanus* or *caniceps*. Moreover, the wing of the type of *mexicanus* is much larger than others, being nearly 7 mm. longer than the average of either Ridgway's or my measurements for *mexicanus*. Contrasting with the shorter wing, the bill of *tardiusculus* is longer, and ten per cent wider at anterior margin of nostril, than either *caniceps* or *mexicanus*.

AVERAGE MEASUREMENTS IN MILLIMETERS OF RACES OF *Megarhynchus pitangua*:

MALES	<i>Ex. Culmen</i>	<i>Width Cul. at Anterior Margin Nostril</i>
7 ads. <i>tardiusculus</i>	32.0 (31.1–34)	14.9 (14.4–15)
1 ad. Type <i>caniceps</i>	30.7 ⁴	13.5
5 ads. (incl. Type) <i>mexicanus</i>	29.2 (28.4–30.2)	13.2 (12.9–13.5)

Vermivora superciliosa sodalis, subsp. nov.

Type.—Male adult in slightly worn breeding plumage, No. 9048, collection of Robert T. Moore; between Chiricahui and Churo, S. W. Chihuahua, Mexico; May 14, 1934; altitude about 7200 feet; collected by Robert T. Moore.

Subspecific characters.—Differs in early nuptial plumage from *Vermivora superciliosa mexicana* (Bonaparte) of eastern Mexico, by having pileum, auriculars and side of neck paler gray; patch on back brighter (more yellowish-green); abdomen averaging whiter; size slightly smaller. Differs from *V. s. palliata* of Guerrero in the same characters as from *V. s. mexicana* and, in addition, yellow of abdominal area less restricted. It differs from true *superciliosa* of Guatemala in being still paler in the gray coloration, par-

⁴ Ridgway (Bull. U. S. N. M. No. 50, Pl. IV, p. 667, gives this measurement, based on one specimen of each sex, 32.5 mm. for each sex. Presumably one was the type.

ticularly in the auricular region. The birds in winter plumage differ in the same way.

Range.—Sierra Madres of northwestern Mexico from an altitude of 6000 to 10,000 feet ranging from southwestern Chihuahua through western Durango and eastern Sinaloa to the vicinity of Tepic in Nayarit.

Specimens examined.—In Moore Collection—*Sodalis*—S. W. Chihuahua: Guasagota 1 ♂ (May 11), between Chirichui and Churo 1 ♂ (May 14 Type), Mt. Mohinora 3 ♂ 2 ♀ (May 12–25 breeding), San Feliz 1 ♂ 1 ♀ 1 im. (Aug. 24); Durango: Muertocito 6 ♂ 3 ♀ (June 6–18, breeding), Rancho Guasimal 2 ♂ 1 im. ♂ (Oct. 27–Nov. 15), Nievero 4 ♂ (March 29–Apr. 3 breeding), Piedra Gorda 3 ♂ (March 8–20); Sinaloa: Santa Gertrudis 3 ♂ 4 ♀ (May 23–27), near Rancho Alisitos 1 ♀ (Aug. 23), Babizos 10 ♂ 1 im. ♂ 6 ♀ (June 19–July 12, breeding; Dec. 8–15), Rancho Batel 1 ♂ 2 ♀ (April 9, 10, Nov. 9); Nayarit: near Tepic 2 ♀ 2 im. ♀ (July 1–29, breeding). *Mexicana*—Puebla: El Venerable, 26 mi. N. W. Texmelucan, 2 ♂ 1 ♀ (March 31–Apr. 2, breeding); District Federal 1 ♂ (June 25); Mexico: San Bartolo 1 ♀ (Jan. 22), Temascaltepec 1 ♂ 1 ♀ (July 16–Aug. 5); Guanajuato: near Xichu 3 ♂ (Apr. 20–26, breeding). Intermediates nearer to *mexicana*—Jalisco: Tapalpa 4 ♂ (Apr. 6–15, breeding). *S. superciliosa*—Honduras: Las Ventafías 1 ♂ (July 24), Monte Verde 1 ♂ 1 ♀ 1 ? (July 20–25), Montaña El Chorro 1 ♀ 1 ? (June 20). Also all specimens of the races of *Vermivora superciliosa* in the Museum of Comparative Zoology, American Museum of Natural History and British Museum.

COMPARATIVE MEASUREMENTS OF ADULT MALES AND FEMALES OF
V. s. Mexicana AND *V. s. sodalis*.

MALES	WING	TAIL
4 ads. <i>mexicana</i>	66.0 (65.4–66.5)	48.7 (47–50)
26 ads. <i>sodalis</i> incl. Type.....	63.3 (58.2–66.1)	46.9 (42.5–49.2)
FEMALES		
3 ads. <i>mexicana</i>	61.2 (60.9–61.8)	47.5 (45.5–49.3)
12 ads. <i>sodalis</i>	59.6 (57.5–61.8)	44.2 (41.6–47.2)

Remarks.—That an undescribed race of Hartlaub's Warbler exists in northwestern Mexico has been known for a number of years to taxonomists, working on Mexican material, but the form has not been differentiated by formal description because of lack of adequate series of fresh specimens, taken at critical localities during the same seasons of the year. Miller and Griscom (Amer. Mus. Nov., No. 183, July 18, 1925, p. 8) noted the smaller size of Jaliscan birds. Recently van Rossem, who previously had discussed the probable characters of the northwestern bird (Bull. Mus. Comp. Zool., Vol. LXXVII, p. 469, 1934) described a new form *V. s. palliata*, not from northwestern Mexico, but from the southwestern state of Guerrero (Proc. Zool. Soc. Wash., Vol. 52, pp. 11–12), differentiating it from *mexicana* by "paler coloration" and adding an additional character—the more restricted "yellow abdominal area." I have inspected apparently the same material, and in addition a large series of seventy-nine individuals in the Moore

Collection, all freshly taken during the past few years from nearly all portions of Mexico, nearly doubling the total available to van Rossem and filling the large gaps, from which specimens were unknown. This fine series reveals that the ancient specimens in the British Museum, collected about fifty years ago, like those in the museums of eastern United States, are badly and unevenly faded, obscuring the important character of the amount of intensity of the yellow patch on the back, as well as the relative degrees of paleness, as we proceed from the northwestern Sierras south. Being careful to compare birds of the same months and equivalent amount of wear, we find the new race exhibits its characters best in the northern part of its range throughout southwestern Chihuahua, northwestern Durango and northeastern Sinaloa. Farther south in Durango we find an occasional specimen, where the gray of the pileum is darker and approaches the coloration of *mexicana*. This is true of the lower elevation groups, such as a series from Rancho Guasimal at 5500 feet elevation from central-western Durango. However, they have the whiter abdomens of *sodalis* and are nearer to it in size and brighter yellow coloration of back. This species occasionally gets its under parts badly soiled as is true of several from Santa Gertrudis in extreme northeastern Sinaloa. The soot can readily be detected with a microscope and may result from the frequenting of pine trees scorched by forest fires. However, two specimens from this locality have pure white unsoiled abdomens. Much farther south at Nievero at an altitude of 8000 feet in western Durango, the birds are larger in size, but still closer in coloration to *sodalis*, as are those of Piedra Gorda, Durango (7000 feet) and Rancho Batel, Sinaloa (6200 feet). The individuals from Tepic, Nayarit, although slightly intermediate, are also closer to *sodalis*. My series from Tapalpa, in west-central Jalisco, represent intermediates between *mexicana* of eastern Mexico and *sodalis*. Miller and Griscom (loc. cit.) found the size of the western bird smaller. Measurements of my series confirm this, but the extremes overlap and the differences are not great. I have not measured specimens in other collections. Zimmer (Field Mus. Nat. Hist., Zool. Ser., XVI, pp. 68-69, 122, 1926) and Hellmayr (Field Mus. Nat. Hist., Pub. 347, Zool. Ser., XII, Part VIII, p. 346, footnote) expressed their belief that Bonaparte's account appear to have priority over Cabanis' description in the "Museum Heineanum." It is assumed that Bonaparte's type came from eastern Mexico, presumably from Veracruz. As my specimens from five widely separated localities (El Venerable in extreme northwestern Puebla; Desierto de Leones; District Federal; San Bartolo and Temascaltepec in the State of Mexico; and Xichu in extreme northeastern Guanajuato) are all the same, it seems reasonably certain they represent *V. s. mexicana*, whether Bonaparte's or Cabanis' type is recognized.

This bird is a rather common warbler of the higher Sierra Madres. None of our specimens come from an altitude lower than 6000 feet and it nests on Mount Mohinora in extreme southwestern Chihuahua at the 10,000 foot level. Although Mr. Lamb found it at Santa Gertrudis, close to the border of Sonora in northeastern Sinaloa, I have not taken it on any of our expeditions to that state, nor does it seem to have been recorded by any one else.

It does not seem to visit the arid coastal plains of Sonora or Sinaloa. From the latter state it has not been recorded previously.

***Cistothorus platensis tinnulus*, subsp. nov.**

Type.—Male breeding adult; No. 23743, collection of Robert T. Moore; Rancho La Cofradia, 4 miles east of Uruapan, W. Michoacan, Mexico; altitude about 5200 feet; July 2, 1939; collected by Chester C. Lamb.

Subspecific characters.—Nearest to *Cistothorus platensis elegans* of Guatemala, but differs in having the pileum paler and more rufous; rump brighter cinnamon and immaculate; median rectrices much paler; pale bars of outer rectrices much more cinnamon; size larger. It differs even more in the same characters from the geographically closer birds of Chiapas, generally recognized as *elegans*, which are darker on the pileum and tail than either. Although resembling the birds of Veracruz, also currently recognized as *elegans*, in the bright cinnamon rump, it lacks their generally obscure streakings and is also a very much paler bird on pileum and tail and much larger.

It differs, of course, even more from *stellaris* of eastern United States, lacking the heavy streakings on the rump, which is much brighter (cinnamon), while the pileum is much paler.

Range.—Known only from western Michoacan, the type locality.

Specimens examined.—*Tinnulus*—Michoacan: Rancho La Cofradia 1 ♂ (July 2 Type). *Elegans*—Guatemala: San Antonio 1 ♂ (May 23); Nicaragua: near San Rafael del Norte 1 ♂ (Apr. 5); Chiapas: Juncaná 2 ♂ 1 ♀ (Sept. 4–Oct. 7); Veracruz: Jalapa 3 ♂ (Apr. 9–15), Orizaba 1 ♂ 1 ♀ (?). *Stellaris*—United States: large series in American Museum Natural History.

Remarks.—Although the type is unique, it is so obviously paler and larger than any of its congeners, that I do not hesitate to describe it. The sex organs were marked by the collector as fully developed and this and the date would indicate it as a true breeding bird. Accretions to the Moore collection are three recently-taken specimens from Chiapas, Mexico, which are close in coloration and size to the Guatemalan bird, true *C. p. elegans*. Whereas the Veracruz series is slightly smaller than Guatemalan birds, the Michoacan type is markedly larger.

AVERAGE MEASUREMENTS IN MILLIMETERS OF *Cistothorus p. tinnulus* and *C. p. elegans*.

MALES	WING
Type (Michoacan)— <i>tinnulus</i>	47.7
4 ads. (Veracruz)— <i>elegans</i>	42.6 (41.8–43.8)
4 ads. (Chiapas to Nicaragua)— <i>elegans</i>	44.2 (43.4–44.9)

***Salpinctes obsoletus sollicitus*, subsp. nov.**

Type.—Female adult in fresh winter plumage, No. 20996, collection of Robert T. Moore; Juncaná, Comitán, Chiapas, Mexico; altitude reported by collector as 1400 meters; September 15, 1937; collected by Mario del Toro Avilés.

Subspecific characters.—Differs from all of the three forms nearest to it geographically, *S. o. neglectus* of Guatemala, *o. notius* of eastern and southern Mexico and *o. obsoletus* of northwestern Mexico and the United States, in having the upper parts pure gray (less brownish); white spots on posterior upper parts much larger and more numerous; spots on pileum more numerous and whiter; spots below fewer and finer than the least spotted of the Guatemalan variables, resembling in this respect the more immaculate individuals of true *obsoletus*.

Range.—Chiapas (Juncaná).

Specimens examined.—*S. o. obsoletus*—large series in Museum of Comparative Zoology and American Museum of Natural History, ranging from Colorado through Arizona, California, Chihuahua, to Jalisco and Volcan de Colima. *Notius*—adequate series in the same museums, ranging from Veracruz to Guerrero. *Neglectus*—very large series in the same museums from Guatemala. In addition, the following in Moore collection: *Obsoletus obsoletus*—Mexico: Sonora: Guirocoba 1 ♂ (Jan. 20); Sinaloa: Los Leones 1 ? (Mar. 27), Surutato 1 ♂ 2 Im. ♂ 2 Im. ♀ (July 17, Sept. 7–13); Durango: Ojito 1 ♂ 2 Im. ♂ (Aug. 19–24). *Notius*—Guanajuato: 6 mi. N. E. Irapuato 1 ♀ (Mar. 23), Rancho Enmedio, 17 mi. N. E. Guanajuato 1 ♀ (Jan. 24), Puerto de Guadalupe 4 ♂ 2 ♀ (May 12–24 breeding); Hidalgo: Portezuelo 3 ♂ (Dec. 14–18); District Federal: Tlalpan (=Tlalpan) 2 ♂ 1 ♀ (June 21, Feb. 15, Aug. 17); Morelos: Ocototec 1 ♂ 1 ♀ (June 19). *Sollicitus*—Chiapas: Comitán: Juncaná 2 ♀ (Sept. 15–17, includ. Type).

Remarks.—The under parts of the new form are intermediate, connecting *S. o. obsoletus* and *S. o. notius* of northwestern and eastern Mexico with *S. o. neglectus* of Guatemala, having faint spots, connected by faint streaks on under parts, but neither so heavily streaked as true *obsoletus* or *notius*, nor so heavily spotted as *neglectus*. The coloration on the upper parts is not intermediate, but a distinctly purer gray than any of these three races. Of the specimens in the eastern museums, I have used for criteria the following adults: *Obsoletus*—3 (Sept.) Ogden, Utah; 1 (Oct. 13) Toquerville, Utah; 1 (Sept.) 2 (Oct.) California; 1 (Oct. 17) Tucson, Arizona; 4 (Sept.–Oct. 8–17) Chihuahua. *Notius*—1 (Nov. 10) Guerrero. Of *neglectus* there were also available 6 (Nov. and Dec.) San Lucas, Guatemala. I have not seen the individual recorded from Cacoprieto, Tehuantepec, on the authority of Sumichrast by Salvin and Godman (*Biologia Centrali-Americana*, Aves, 1, p. 71). The individual from the same place mentioned by Bangs and Peters (*Bull. Mus. Comp. Zool.*, Vol. LXVIII, No. 8, p. 399) is so badly abraded it can not be determined absolutely, but has faint spots on the belly, seeming to be slightly intermediate, but closer to *notius*.

Griscom (*Bull. Mus. Comp. Zool.*, Vol. 75, No. 10, p. 395) reiterates a previously made statement (*Bull. Amer. Mus. Nat. Hist.*, Vol. LXIV, p. 297) that he can not recognize *S. o. notius* Ridgway of Veracruz. Two recently-taken immatures, secured June 19, 1935, at Ocototec, Morelos, and a June 1, 1931, specimen in the Museum of Comparative Zoology, collected at Chilpancingo, Guerrero, are identical, contrasting strongly with a series of immatures from Colorado (2), Chihuahua (2), Arizona (4),

Jalisco (2) and showing exactly the characters claimed by Ridgway (Birds North & Mid. Amer., pt. III, pp. 648-649), which he stated could be observed only in the immatures.

Ridgway includes Jalisco in the range of *notius*. But two young from Jalisco in the American Museum of Natural History are like those of true *obsoletus*, being paler, more snuff-gray on the median rectrices; and an immature from Guerrero in the Museum of Comparative Zoology is exactly like my two from Morelos, indicating the range of *notius* extends through Jalisco to Guerrero. Unfortunately there seem to be no immatures from Chiapas. Lacking immatures from Guanajuato and following the usual affinities of plastic races I assign birds of eastern Guanajuato to *notius*. This is not the place to discuss the possibility of the priority of *Troglodytes latifasciatus* Lichtenstein over Ridgway's *S. o. notius*.

I am greatly indebted to Mr. James L. Peters and the Museum of Comparative Zoology, to Mr. John T. Zimmer and the American Museum of Natural History, to Dr. Alexander Wetmore, Dr. Herbert Friedmann and the United States National Museum, to Dr. Harry C. Oberholser and the Biological Survey, to Mr. N. B. Kinnear and the British Museum, to Mr. George Willett and the Los Angeles Museum, and to Dr. Louis B. Bishop for permission to inspect material in their respective collections.